User Manual
Expandable Digital Matrix
EDM-1818M

Digital Extender®

Total Digital Connectivity Solutions

Cautions:

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2. Any of the products may be changed without any notice in order to improve the function of the product.
3. The design and specification of the product may be changed without any prior notice.

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1. Basic understandings of the product

1-1 Cautions for safety

- All the safety and user manual should be read before the appliance is operated.
- The safety and operating instructions should be retained for future reference.
- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use this equipment near wet place.
- This product should be operated only from the type of power sources indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your local power company. For equipment intended to operate from battery power, or other source, refer to the user manual.
- This equipment may be equipped with a 3 wire grounding-type plug, a plug having a third (grounding) pin. This pin will only fit in to a grounding type power outlet. This is a safety feature. If you are unable to insert the plug in to the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
- Opening in the cabinet are provided for ventilation and to ensure reliable operation of the equipment and to protect it from overheating. The openings should never be blocked.
- Do not use any damaged power cords or plugs, or loosed outlets, this may cause electrical shock or fire.
- Do not put heavy articles such as other equipments on this product.
- Keep it away from liquid, magnetic, inflammable substances.
- Turn off power before insert or take out INPUT/OUTPUT slot card.
- Input/Output cards may be damaged when they are replaced with power turned on

If you experience any malfunctioning of product or have any question regard to operation of the product, please contact our customer service center.

RTcom USA, Inc.
Tel: 973-383-4878
info@digitalextender.com

Declaration of Conformity

According to Council Directive 73/23/EEC (February 19, 1973) on the Harmonization of the Laws of Member States relating to Electrical Equipment; Council Directive 89/336/EEC (May 3, 1989) on Electromagnetic Compatibility; Council Directive 93/68/EEC (July 22, 1993)-Amending Directives 89/336/EEC (MC) and 73/23/EEC (Low Voltage Equipment Safety), and/or CPU Boards and Power Supplies used Council Directive 93/68/EEC with Matrix, RTcom USA, Inc., 286 Houses Corner Rd. Sparta, NJ 09871 973-383-4878, declares under sole responsibility, that the product identifies with 93/66/EEC of the Council Directive Low Voltage Equipment Safety. Each product marketed is identical to the representative unit tested and found to be compliant with the standards.

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1-2 Package Includes

- Main body: EDM-1818M
- Power adapter: DC12V, 12A
- RS-232C & LAN cables
- User's manual

1-3 Features of the product

Digital Matrix Router (EDM-1818M) supports all kinds of digital interfaces such as DVI, HDMI, HD-SDI/SDI and Display Port, which are applied to most digital products. It is designed to meet customers' needs, providing prompt availability for any interface with simple replacement of Input/Output cards. EDM-1818M is integrating multiple DVI digital video sources with multiple displays.

- 19" standard rack type case (6U)
- Can use up to 18 outputs monitors or displays
- Supports various combination with Input / Output cards based on backplane
- Supports reading and saving function of EDID data from displays
- Plug-and-play of windows which makes set up and installation easy.
- Compliant to High-bandwidth Digital Content Protection (HDCP)
- Supports high resolution up to WUXGA(1920x1200)@60Hz, 1080p@60Hz
- Convenient control using 3 methods
    - Select by front Touch panel directly
    - Select by LAN (TCP/IP).
    - Control method through RS-232C COM port
- It has an instantaneous noise protection circuit in input and output ports therefore it can protect expensive equipment from fault caused by noises (if any).
- Convenient to change firmware through directly update by PC.

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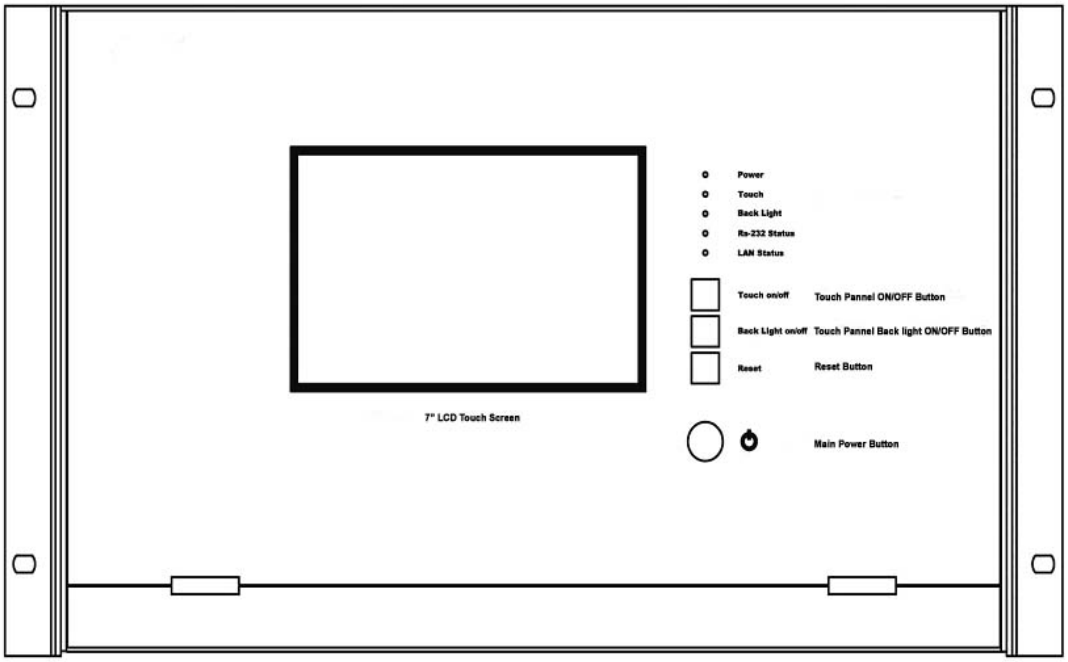
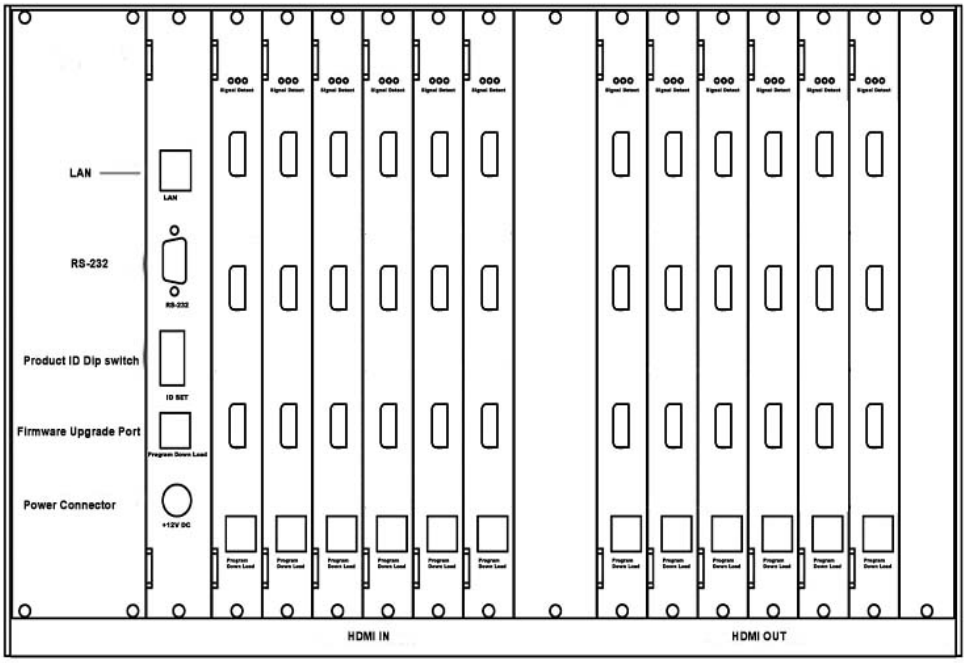
1-4 Names and functions of each part





<EDM-1818M HDMI Type>

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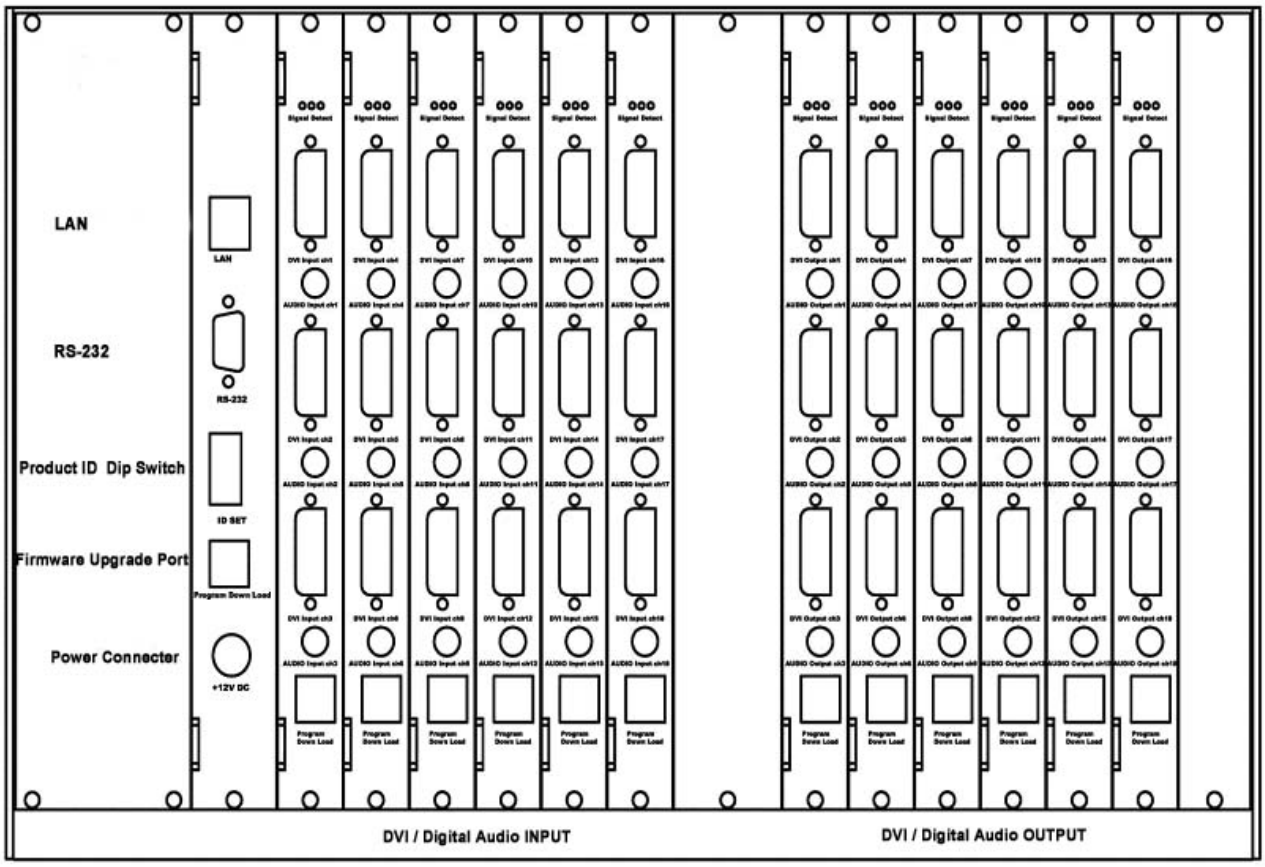

<EDM-1818M DVI Type>

1-5 Installation environments and methods

For installation environments, we recommend the following environments for our matrix.

- Below 30°C of ambient temperature (Best condition)
- Install and operate in the environment below 60% of ambient humidity (Best condition)
- Use it in the environment of free of vibrations and dusts and in good ventilation condition
- Recommend stabilized AC input power (Recommend to use AVR).

2. Functions of the product

2-1. System operation configuration diagram

Operation configuration diagram of the matrix is shown in following picture.

Any of the input signals can be selected to each output port by front panel switch, external RS-232C or LAN. Any combinations of input signals can be selected at output side.

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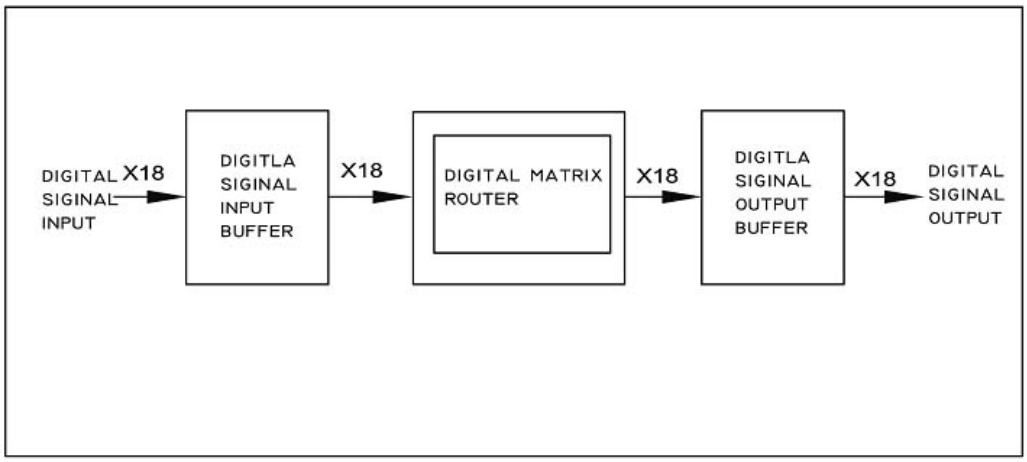
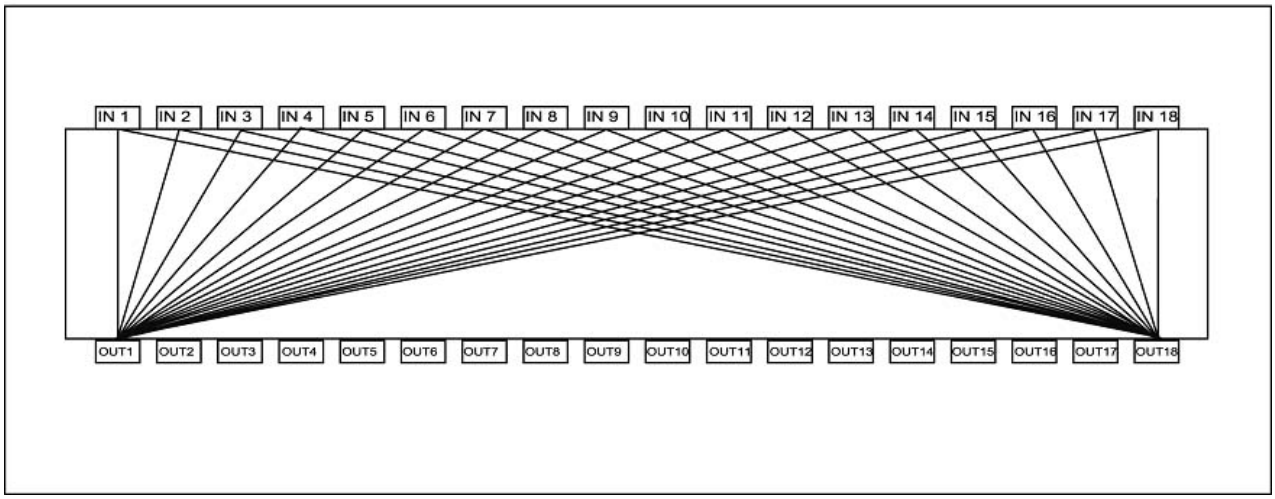
Digital Matrix Router Signal Pass



Digital Matrix Router Switching



2-2 Specifications of the product

- Type of signals: TMDS signals, digital R.G.B. 2k
- HDMI data transmission band: 2.25 Gbps (single link).
- DVI-D data transmission band: 1.65 Gbps (single link).
- HDMI version 1.3 with deep color 36 bits
- Resolutions: VGA (640*480) ~ WUXGA (1900*1200)@60Hz, 720p~1080i/p.
- Audio IN/OUT: digital audio coaxial (DVI board only)
- Panel: 7 inch touch panel, pressure recognition type
- Port switch control: Front LCD touch panel, RS-232C port, LAN port.
- Input-output port: Input 18 / output 18
- Input-output connector: DVI-D 29 pin Female or HDMI 19 pin Female
- Power source: DC12V, 12.5A
- Power consume: 100Watts/max : 120Watts.
- Size (Width * Length *Height, mm): 436 * 260 * 266.
- Weight: 11.5 kg.

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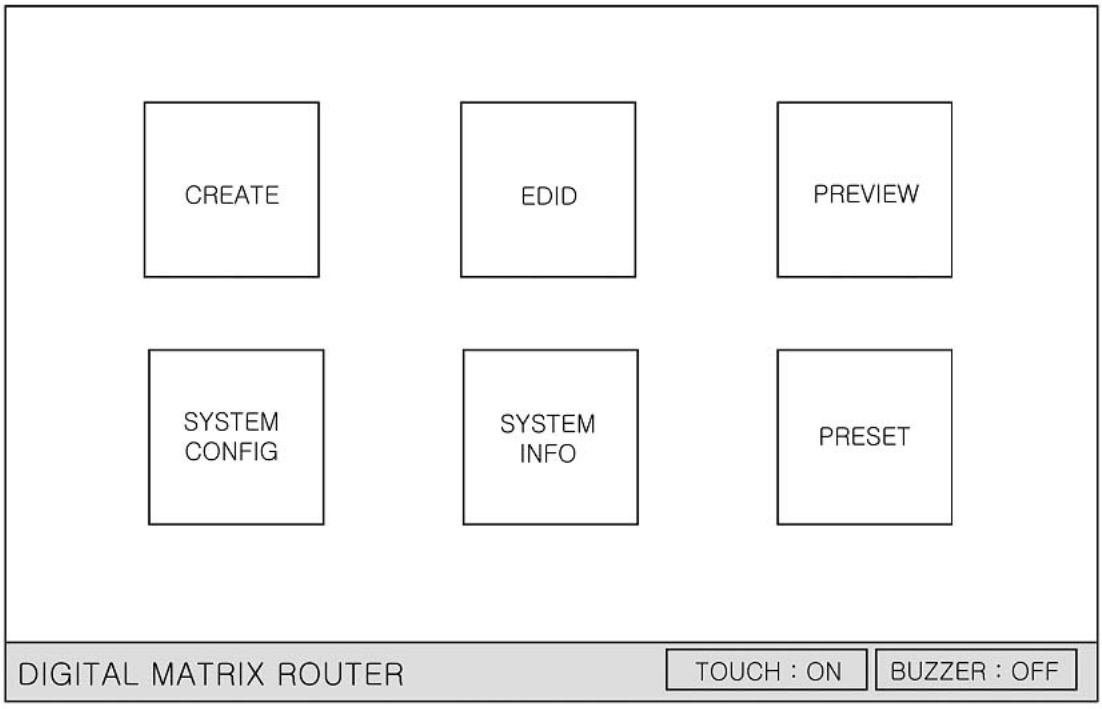
3. How to use

3-1 How to set channels

If matrix is switched ON, front touch panel shows internal set up status after initiation of the system. Then it shows main menu as follows.



Function of Switches on front panel
Power switch: power On/Off
Touch On/Off: touch panel operation On/Off
Back Light On/Off: touch panel backlight On/Off
Reset: rebutting after pushing the button for 3~4 seconds

Touch Panel Main Menu
CREATE: set up input/output channel
EDID: retrieve and save the EDID data from displays

PREVIEW: preview the status of input/output channel or EDID set up
SYSTEM CONFIG: set up internal system
SYSTEM INFO: review the general status of the system
PRESET: preset input/output channels which are often used
RESET: If you push this button for 3 seconds, it executes rebooting of the system. Set up data and final switching data are recovered.

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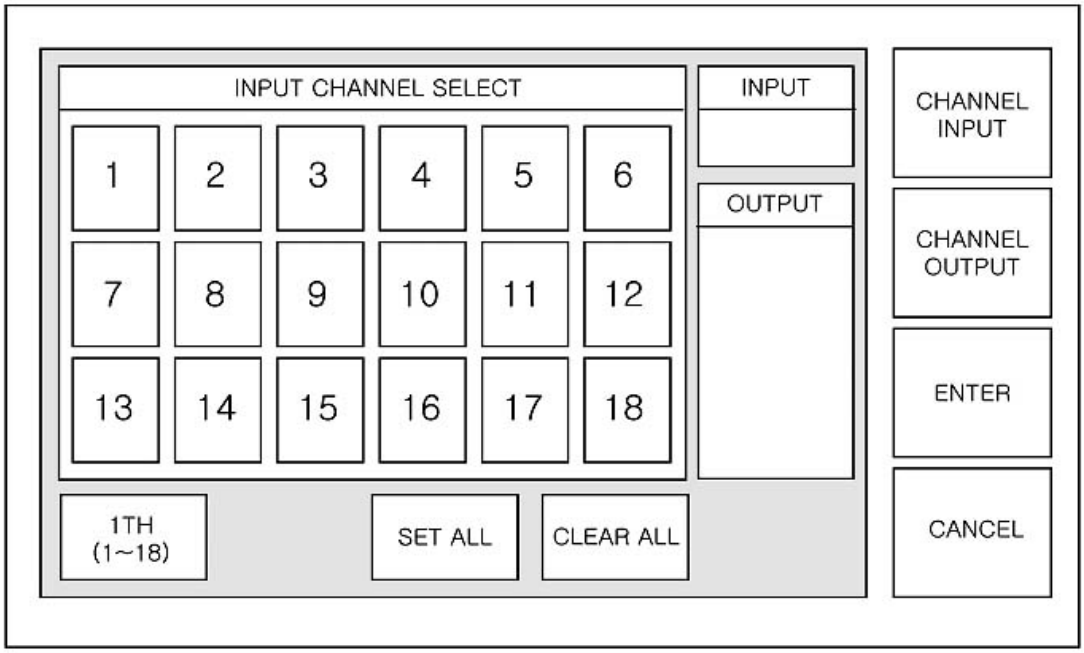
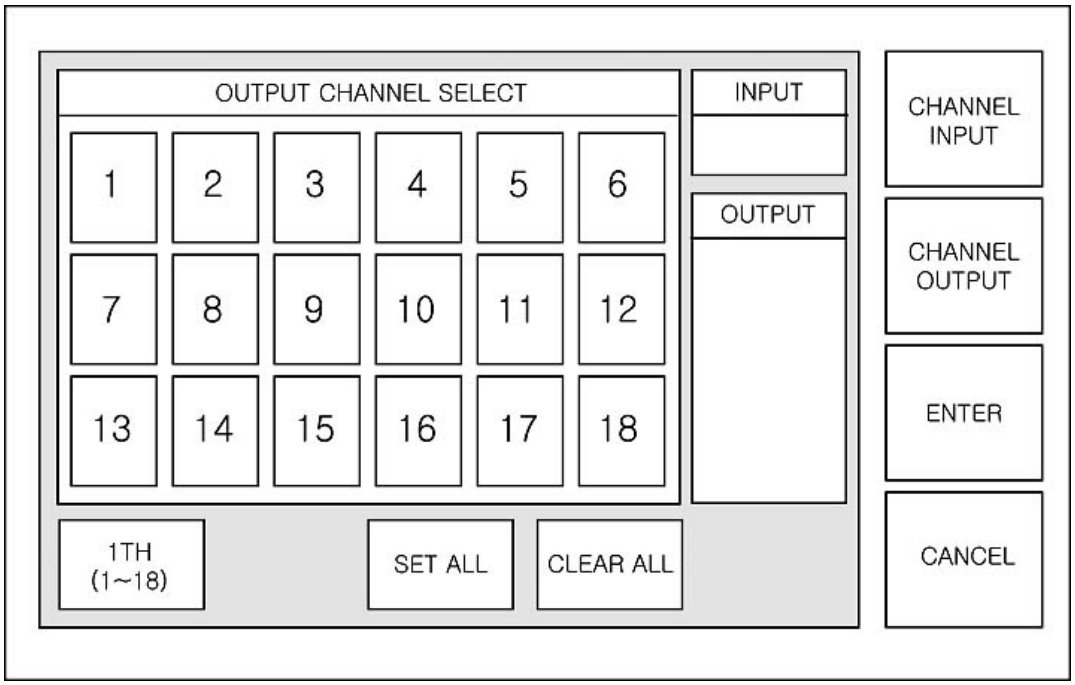
Select of Input/Output channel: If CREATE on main menu is selected, below screen will show up

CHANNEL INPUT menu -> Select Input button



Push CHANNEL OUTPUT button -> select Output button (multiple selection) -> push ENTER button



Push CANCEL button to cancel the set up -> return to main menu
SET ALL: select all output
CLEAR ALL: cancel all selection

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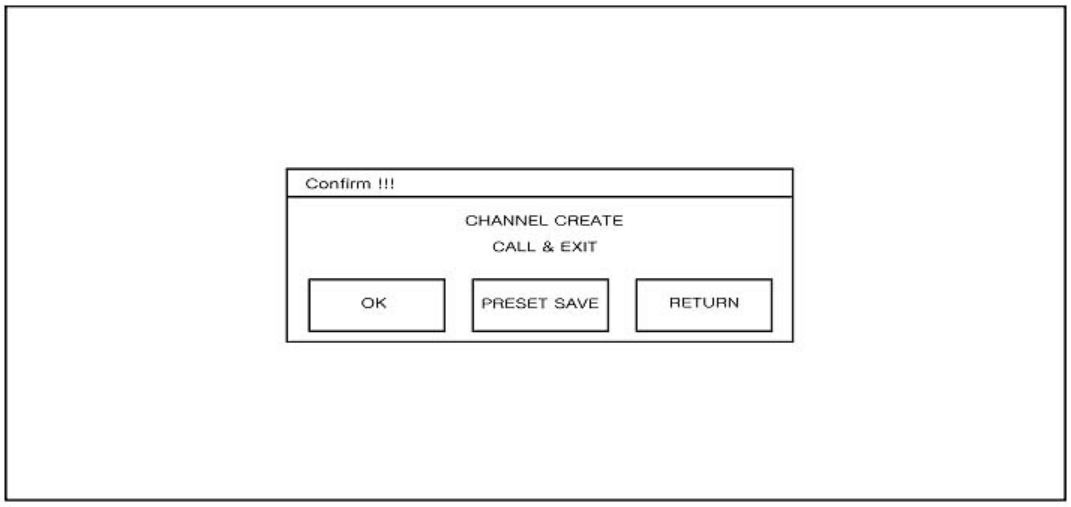

OK: finish the channel set up -> return to main menu
PRESET SAVE -> start PRESET menu
RETURN -> return to CHANNEL OUTPUT menu

Set EDID Data

Built-in Extended Display Identification Data (EDID) read & write function, with **E**lectrically **E**rasable **P**rogrammable **R**ead-**O**nly **M**emory (EEPROM), to save display EDID data while supporting any HDTV with maximum resolutions. The unit also supports non-Video Electronics Standards Association (VESA) resolution, including projectors with unique resolutions. This function is easy to set up by the user If you use DVI monitors, should be set the EDID first.

****** EDID [Extended Display Identification Data]**

EDID is defined by a standard published by the Video Electronics Standards Association (VESA). The EDID includes manufacturer name, product type, phospher or filter type, timings supported by the display, display size, luminance data and (for digital displays only) pixel mapping data.

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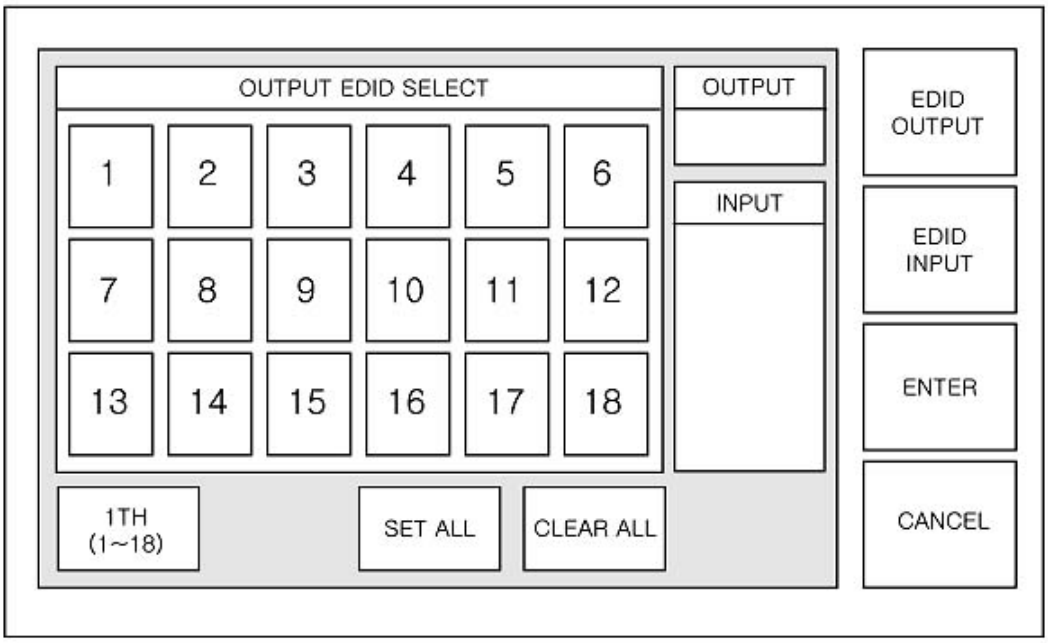
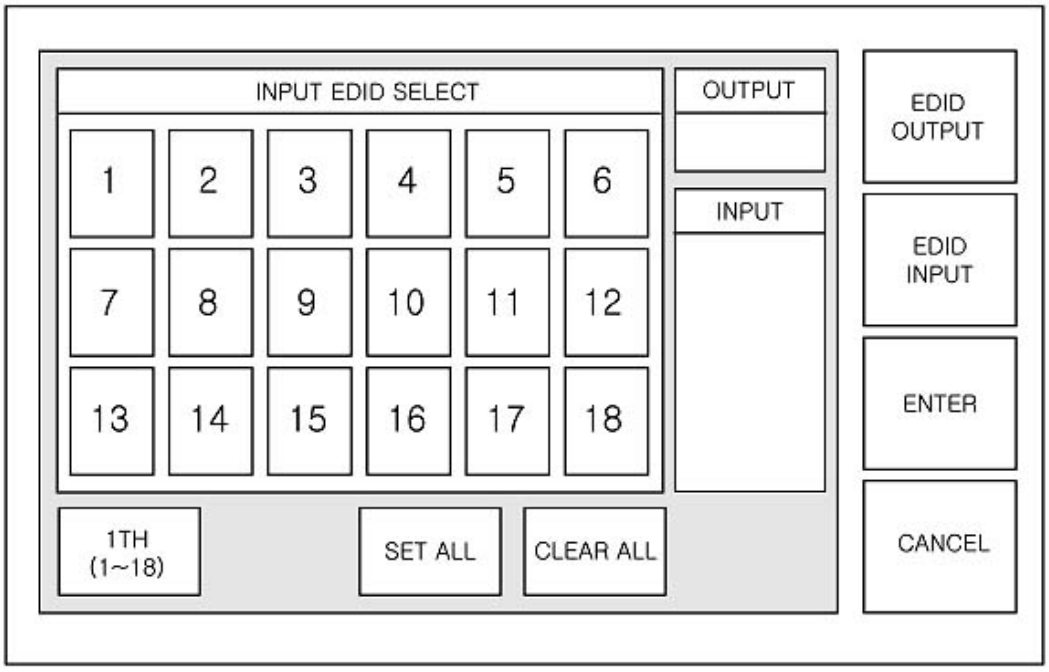
Retrieve and Save of EDID: If EDID on main menu is selected, below screen will show up



OUTPUT EDID SELECT menu -> select OUTPUT to retrieve



Push EDID INPUT button -> select INPUT button (multi ## selection) -> push ENTER button
SET ALL: select all output
CLEAR ALL: cancel all selection

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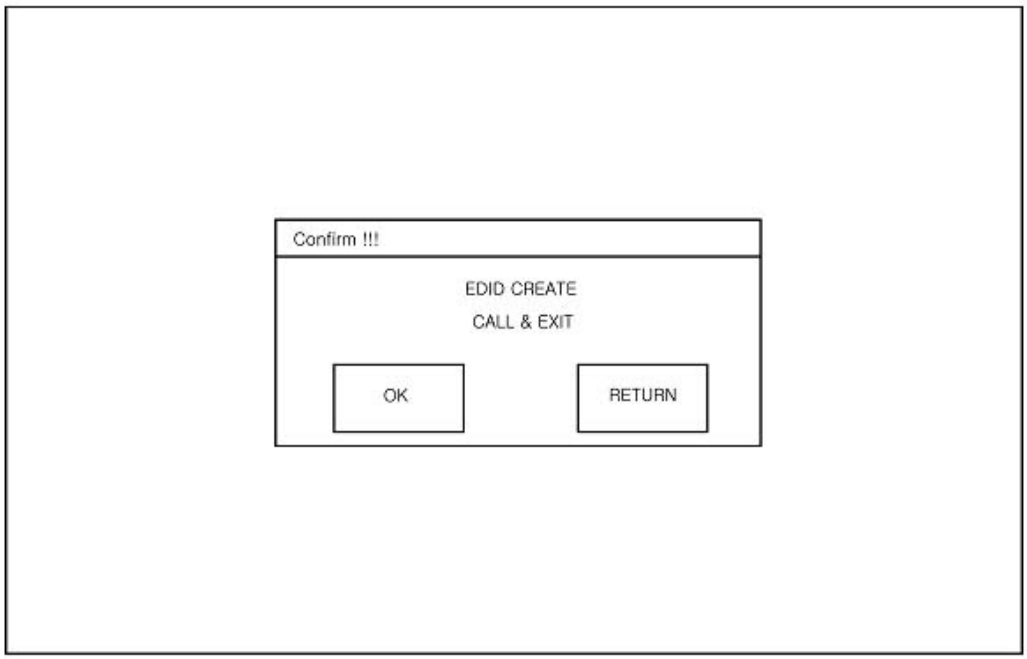
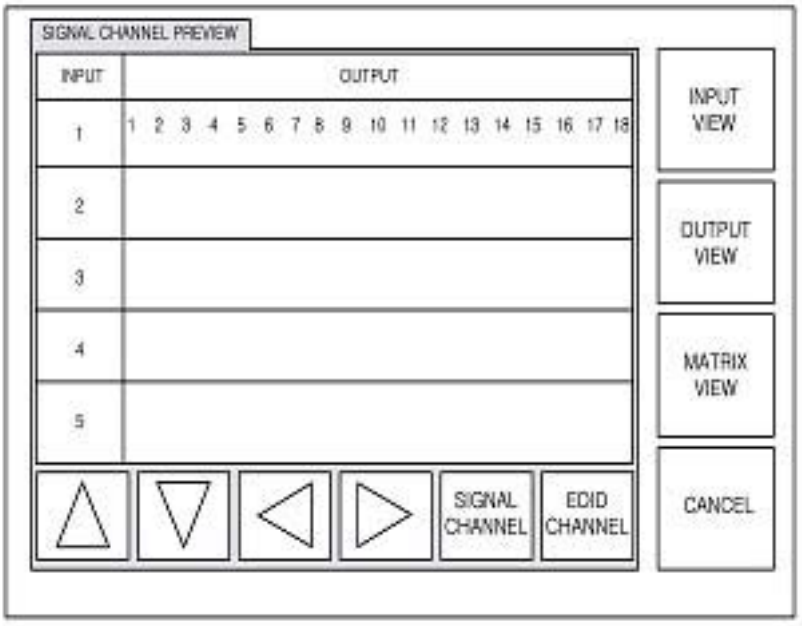


OK: finish the EDID save -> return to main menu
RETURN -> return to INPUT EDID SELECT menu

Preview of Input and Output Channel or EDID selection: If PREVIEW on main menu is selected, below screen will show up



Input and Output CHANNEL PREVIEW menu shows up as initial screen

INPUT VIEW -> show the status of switching based on input

OUTPUT VIEW -> show the status of switching based on output

MATRIX VIEW -> show the status of input/output at the same time

ARROW -> move the screen to front, back, left and right side

CANCEL -> return to main menu

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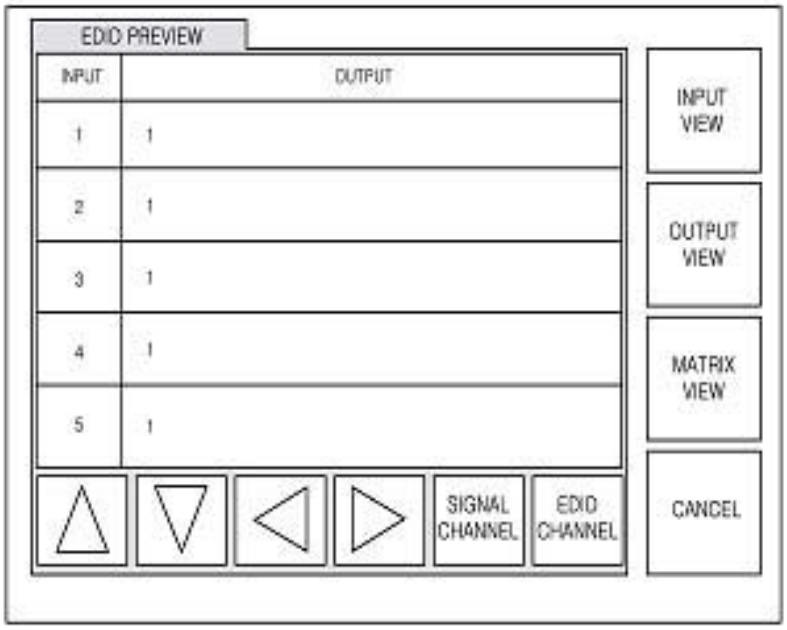


If EDID Channel button is selected, EDID PREVIEW menu shows up

INPUT VIEW -> show the status of input/output based on input

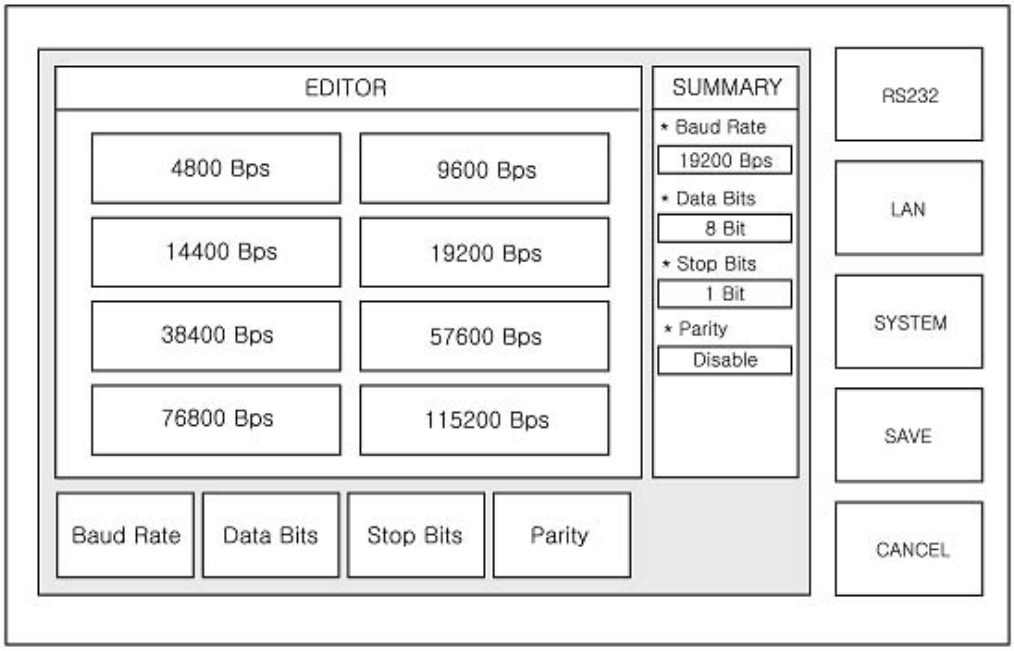
OUTPUT VIEW -> show the status of input/output based on output

MATRIX VIEW -> show the status of input/output at the same time

ARROW -> move the screen to front, back, left and right side

CANCEL -> return to main menu

System set up: If SYSTEM CONFIG is selected, below screen will show up



SYSTEM CONFIG is for the set up of RS-232, LAN, and SYSTEM.
RS-232 set up menu shows up as initial screen.

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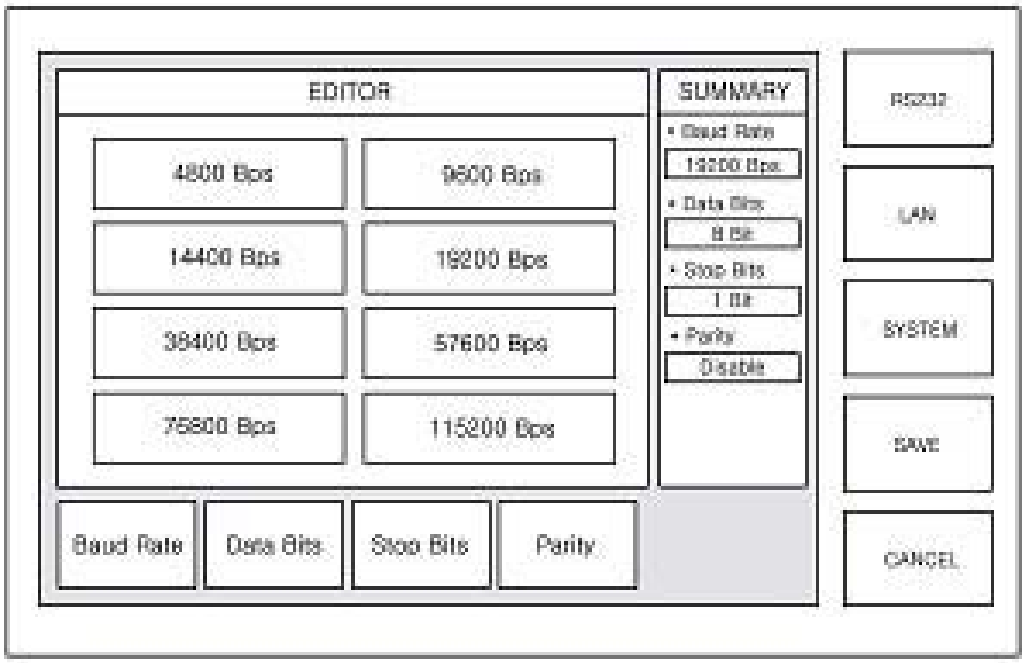


Baud Rate: set up communication speed of RS-232, default: 19200BPS

DATA Bits: set up data bits, default: 8 bit

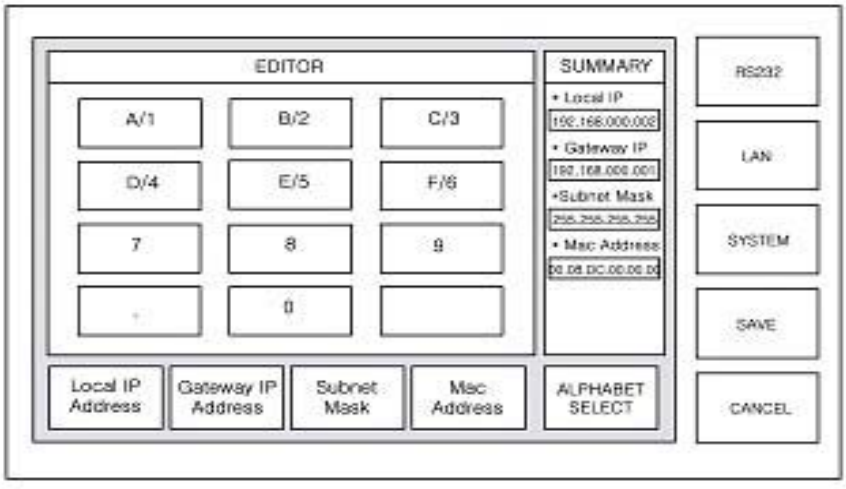
Stop Bits: set up stop bits, default: 1 bit

Parity: confirm parity, default: Disable

SAVE: save set up

CANCEL: return to main menu

If LAN menu on the right side is selected, below LAN set up menu shows up.



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Local IP Address: set up local IP address, default: 192.168.000.002

Gateway IP Address: set up Gateway IP Address, default: 192.168.000.001

Subnet Mask: set up Subnet Mask, default: 255.255.255.255

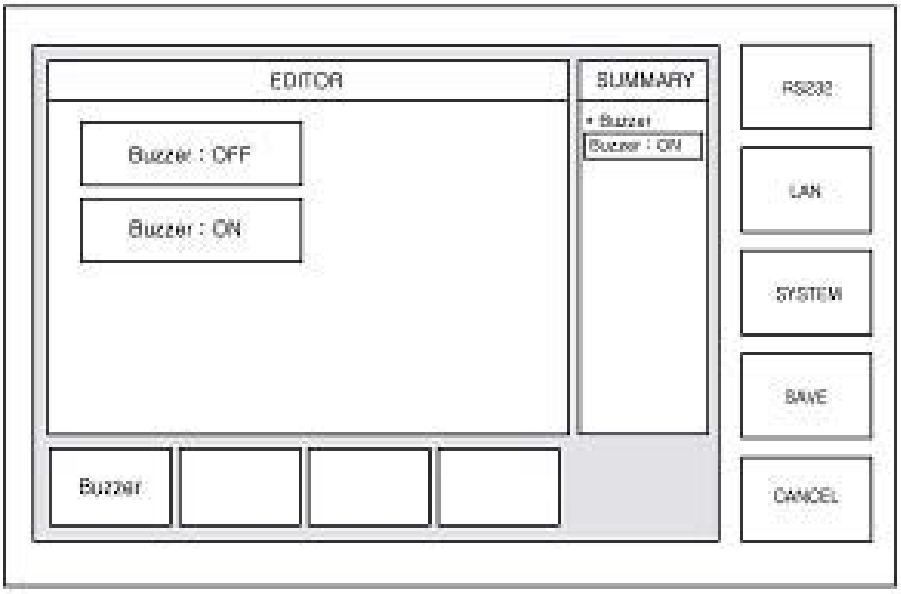
Mac Address: set up Mac Address, default: 00.08.DC.00.00.00

ALPHABET SELECT: select alphabet and numbers

SAVE: save set up

CANCELL: return to main menu

If SYSTEM menu on the right side is selected, below SYSTEM set up menu shows up.



Buzzer: Buzzer sound On/Off
SAVE: save set up
CANCEL: return to main menu

Preview of Channel and System set up: If SYSTEM INFO is selected, below screen shows up.

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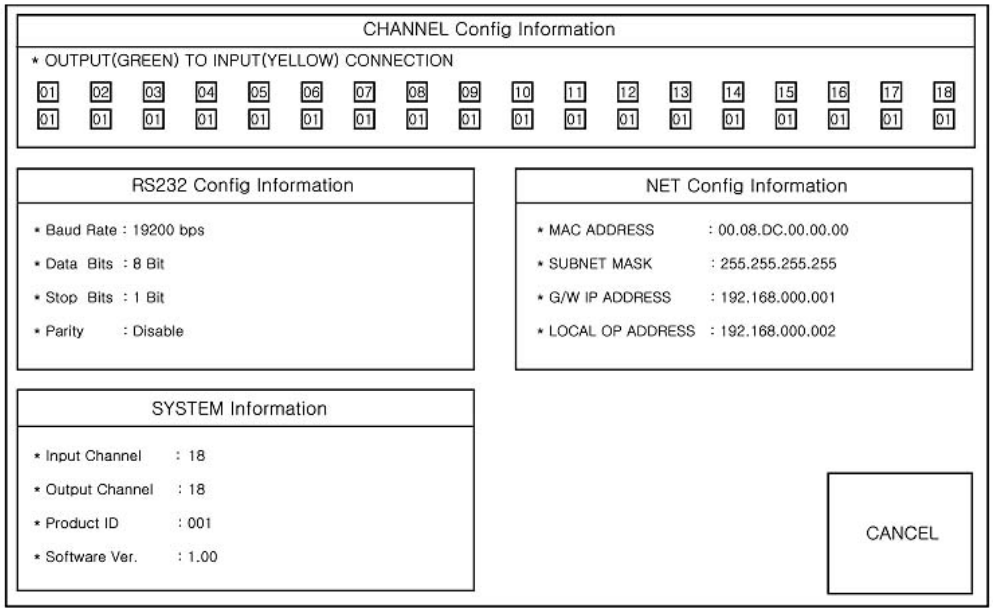
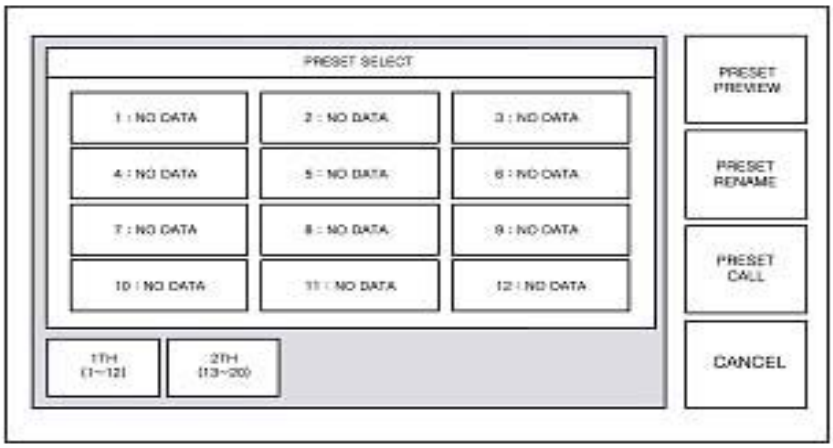

CHANNEL Config Information
* OUTPUT(GREEN) TO INPUT(YELLOW) CONNECTION
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18
01 01 01 01 01 01 01 01 01 01 01 01 01 01 01 01 01 01
RS232 Config Information
* Baud Rate : 19200 bps
* Data Bits : 8 Bit
* Stop Bits : 1 Bit
* Parity : Disable
NET Config Information
* MAC ADDRESS : 00.08.DC.00.00.00
* SUBNET MASK : 255.255.255.255
* G/W IP ADDRESS : 192.168.000.001
* LOCAL OP ADDRESS : 192.168.000.002
SYSTEM Information
* Input Channel : 18
* Output Channel : 18
* Product ID : 001
* Software Ver. : 1.00
CANCEL

SYSTEM INFO tells current status of channel selection and system set up.

If CANCEL is selected, it returns to main menu.

Preset set up: If PRESET on main menu is selected, below screen shows up. It previously saves the selection of input/output channels up to 20.



PRESET PREVIEW -> show the status of saved preset channels

PRESET RENAME -> rename saved preset number and name

PRESET CALL -> change current channels to channels of selected preset

CANCEL -> return to main menu

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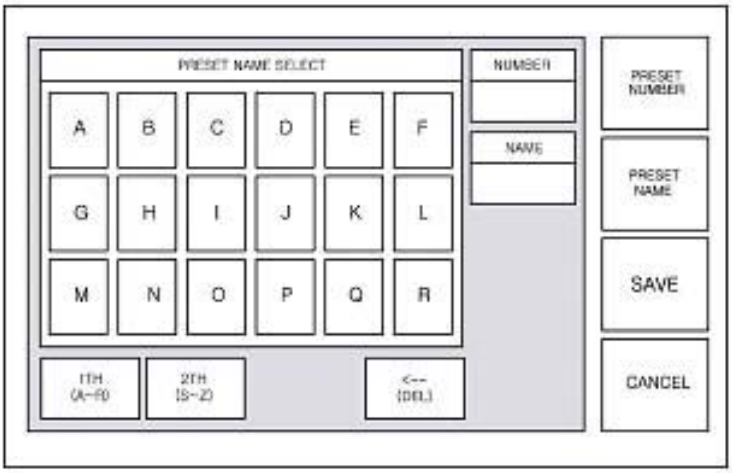


PRESET NAME -> change the name of preset selected by preset number.

Name is up to 12 letters.

SAVE -> save changed name

CANCEL -> return to main menu

Preset Save: Create-> Input-> Select#-> Output-> Select Multiple ##->If you add more input go to Input again->

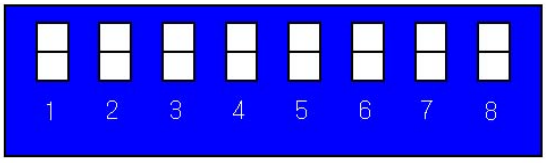
If you done all Input and Output ->Enter-> Preset Save->

Preset Number -> Select#-> Preset Name-> Input Name->Save

Preset Call: Preset Call-> Select Preset Name-> Preset Call

3-2 Product number setting

- Product ID setting (DIP switch)
- It sets its own address of matrix if many matrixes are used.
- It sets in binary values.
- The product number is the value set in deep switches of the equipment and can be set in the values of 1 ~ 255. If the value is set as “0”, then the channel does not work.
  For example;
  Product ID = 01 (00000001b) -- 1 ON, 2 OFF, 3 OFF, 4 OFF, 5 OFF, 6 OFF, 7 OFF, 8 OFF,
  Product ID = 10 (00001010b) -- 1 OFF, 2 ON, 3 OFF, 4 ON, 5 OFF, 6 OFF, 7 OFF, 8 OFF,
  Product ID = 23 (00010111b) -- 1 ON, 2 ON, 3 ON, 4 OFF, 5 ON, 6 OFF, 7 OFF, 8 OFF



****The product ID is set number “1” at the time of its delivery (Factory Default)**.*

3-3 RS-232C (COM PORT) communication setting

After booting the matrix, connect RS-232C cable and then make communication settings as follows:

- Execute DVI switch controller 3.0, MiniTerm.exe or hyper terminal.
- Communication setting:
  You may set port COM 1 ~ 4 or you may use all available ports.

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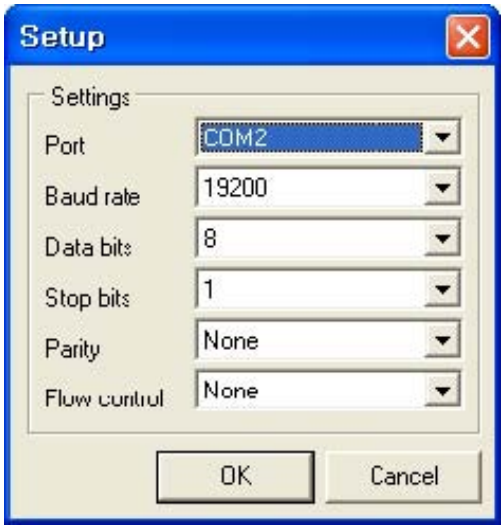
Baud rate: 19200, Data bit:8, Stop bit:1, Parity: None, Flow Control: None

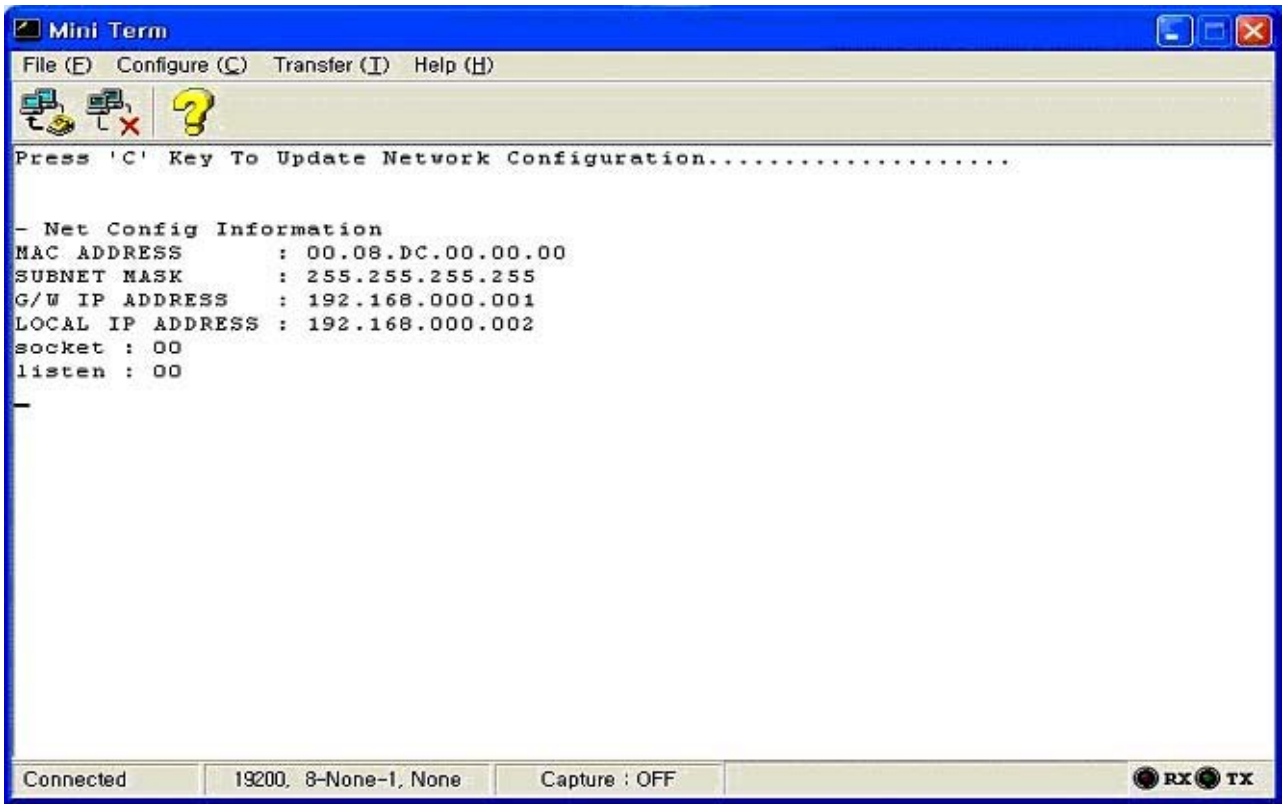
3-4 LAN (TCP/IP) Communication setting

In order to control to matrix trough LAN port, first of all, internet IP should be set.
The methods to set are as follow:

1. Set up at SYSTEM CONFIG on main menu of touch panel
2. Execute Digital Controller, MiniTerm.exe or Hyper terminal



After setting as above, connect communication and switch “ON” the EDM-1818M.



If above screen shows up, press C key to start network configuration.
If C key is not pressed or ESC key is pressed, then it will be operated with existing IP.

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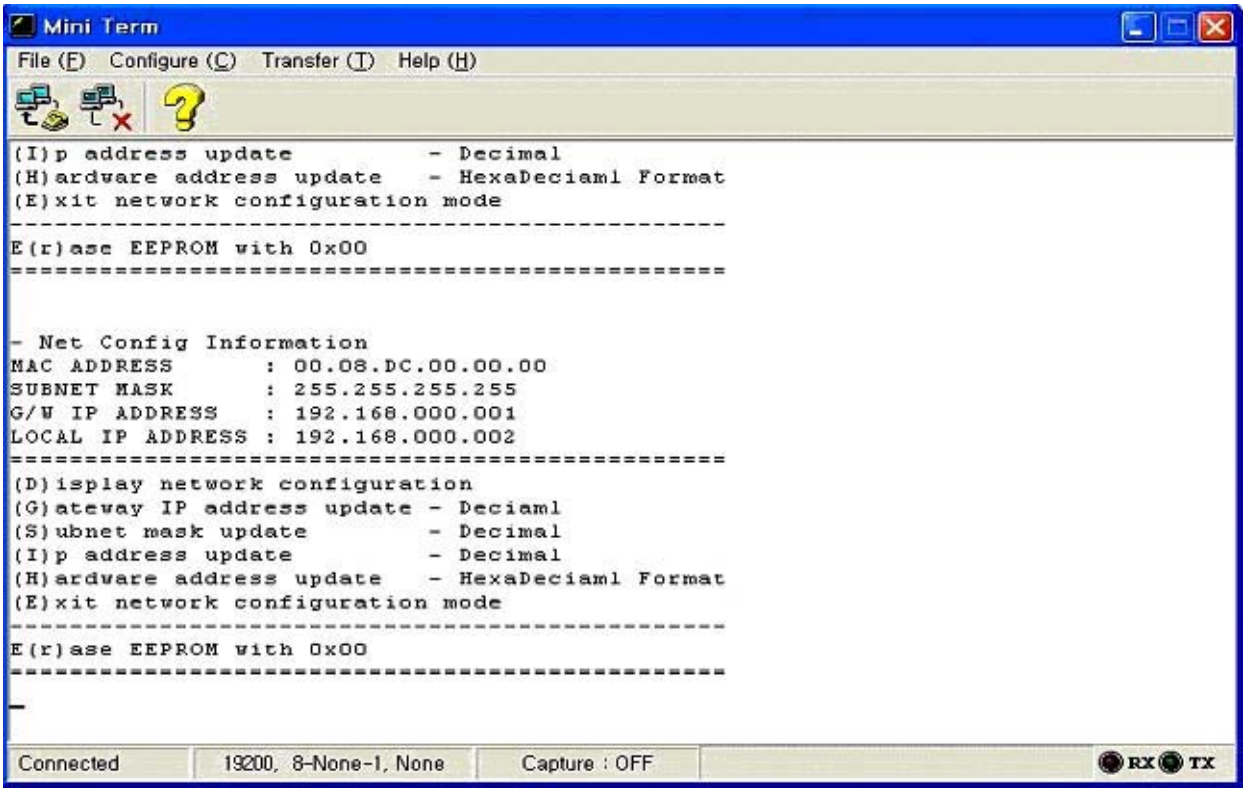
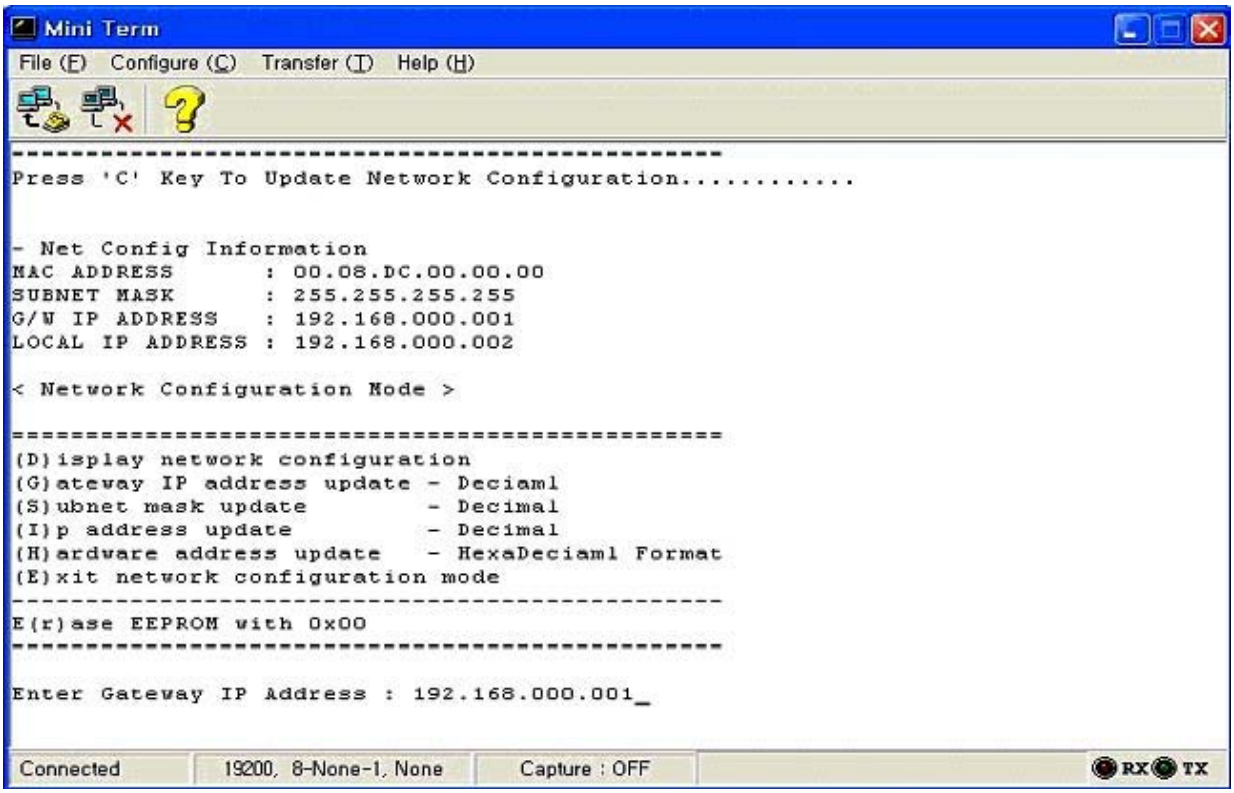

Mini Term
File (F) Configure (C) Transfer (T) Help (H)
(I)p address update - Decimal
(H)ardware address update - HexaDeciaml Format
(E)xit network configuration mode
E(r)ase EEPROM with 0x00
- Net Config Information
MAC ADDRESS : 00.08.DC.00.00.00
SUBNET MASK : 255.255.255.255
G/W IP ADDRESS : 192.168.000.001
LOCAL IP ADDRESS : 192.168.000.002
(D)isplay network configuration
(G)ateway IP address update - Deciaml
(S)ubnet mask update - Decimal
(I)p address update - Decimal
(H)ardware address update - HexaDeciaml Format
(E)xit network configuration mode
E(r)ase EEPROM with 0x00
Connected
19200, 8-None-1, None
Capture : OFF
RX TX

If D key is inputted, existing set information is displayed.


Mini Term
File (F) Configure (C) Transfer (T) Help (H)
Press 'C' Key To Update Network Configuration.....
- Net Config Information
MAC ADDRESS : 00.08.DC.00.00.00
SUBNET MASK : 255.255.255.255
G/W IP ADDRESS : 192.168.000.001
LOCAL IP ADDRESS : 192.168.000.002
< Network Configuration Mode >
(D)isplay network configuration
(G)ateway IP address update - Deciaml
(S)ubnet mask update - Decimal
(I)p address update - Decimal
(H)ardware address update - HexaDeciaml Format
(E)xit network configuration mode
E(r)ase EEPROM with 0x00
Enter Gateway IP Address : 192.168.000.001
Connected
19200, 8-None-1, None
Capture : OFF
RX TX

Input G key and input Gateway IP.

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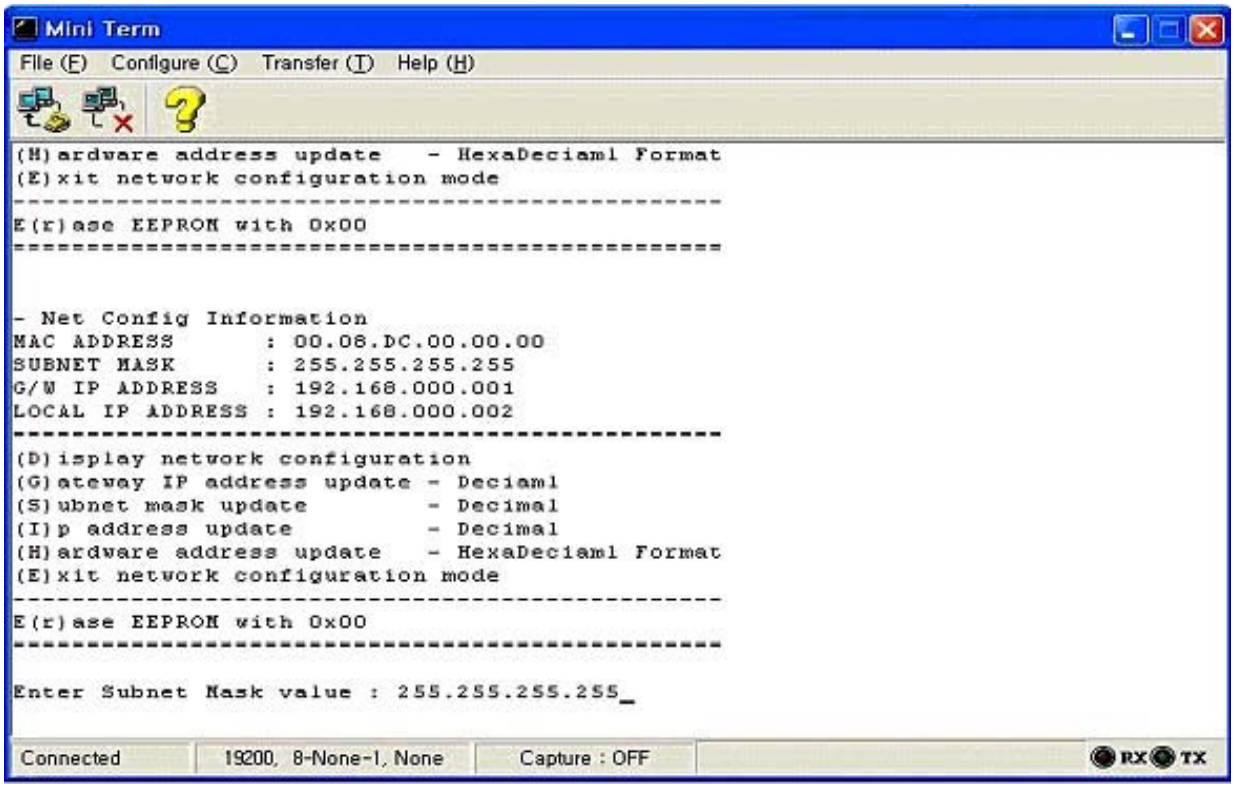
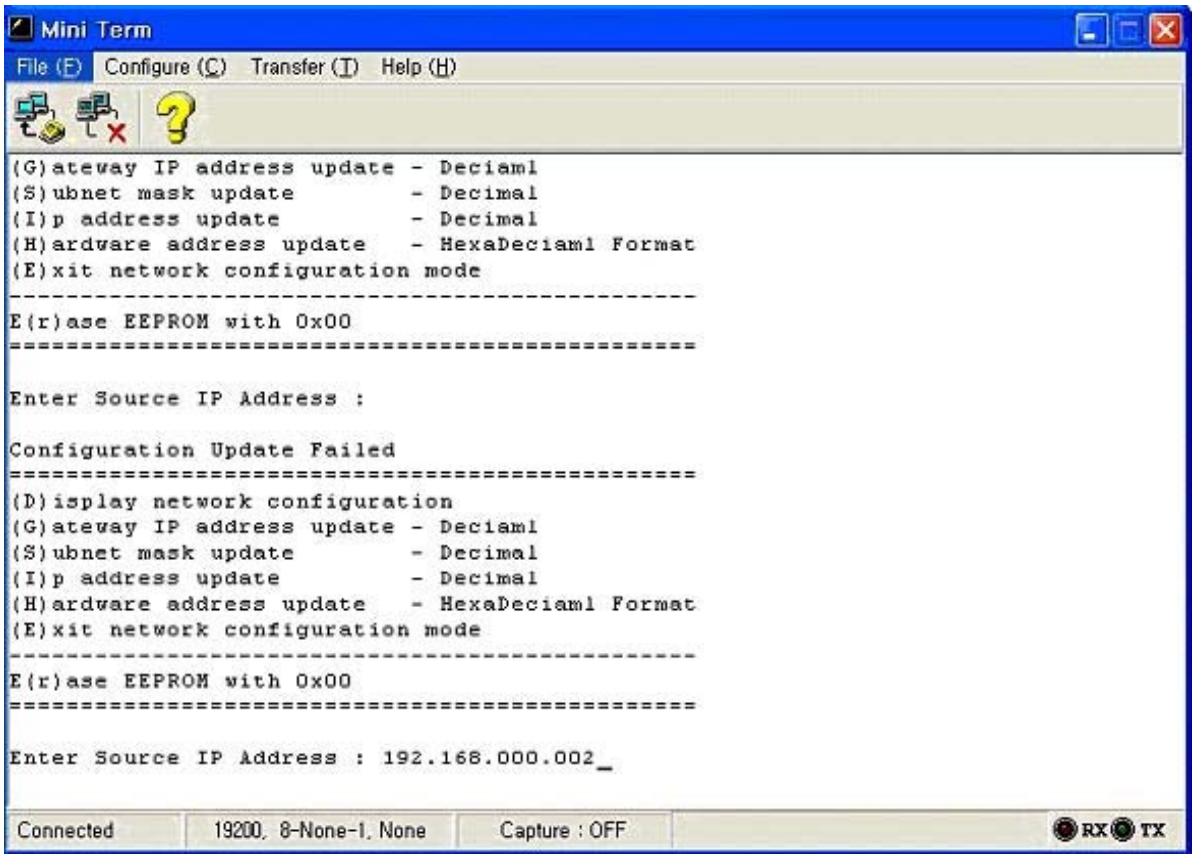

Mini Term
File (F) Configure (C) Transfer (T) Help (H)
(H)ardware address update - HexaDeciaml Format
(E)xit network configuration mode
E(r)ase EEPROM with 0x00
- Net Config Information
MAC ADDRESS : 00.08.DC.00.00.00
SUBNET MASK : 255.255.255.255
G/W IP ADDRESS : 192.168.000.001
LOCAL IP ADDRESS : 192.168.000.002
(D)isplay network configuration
(G)ateway IP address update - Deciaml
(S)ubnet mask update - Decimal
(I)p address update - Decimal
(H)ardware address update - HexaDeciaml Format
(E)xit network configuration mode
E(r)ase EEPROM with 0x00
Enter Subnet Mask value : 255.255.255.255_
Connected
19200, 8-None-1, None
Capture : OFF
RX TX
Input S key and input subnet mark.


Mini Term
File (F) Configure (C) Transfer (T) Help (H)
(G)ateway IP address update - Deciaml
(S)ubnet mask update - Decimal
(I)p address update - Decimal
(H)ardware address update - HexaDeciaml Format
(E)xit network configuration mode
E(r)ase EEPROM with 0x00
Enter Source IP Address :
Configuration Update Failed
(D)isplay network configuration
(G)ateway IP address update - Deciaml
(S)ubnet mask update - Decimal
(I)p address update - Decimal
(H)ardware address update - HexaDeciaml Format
(E)xit network configuration mode
E(r)ase EEPROM with 0x00
Enter Source IP Address : 192.168.000.002_
Connected
19200, 8-None-1, None
Capture : OFF
RX TX

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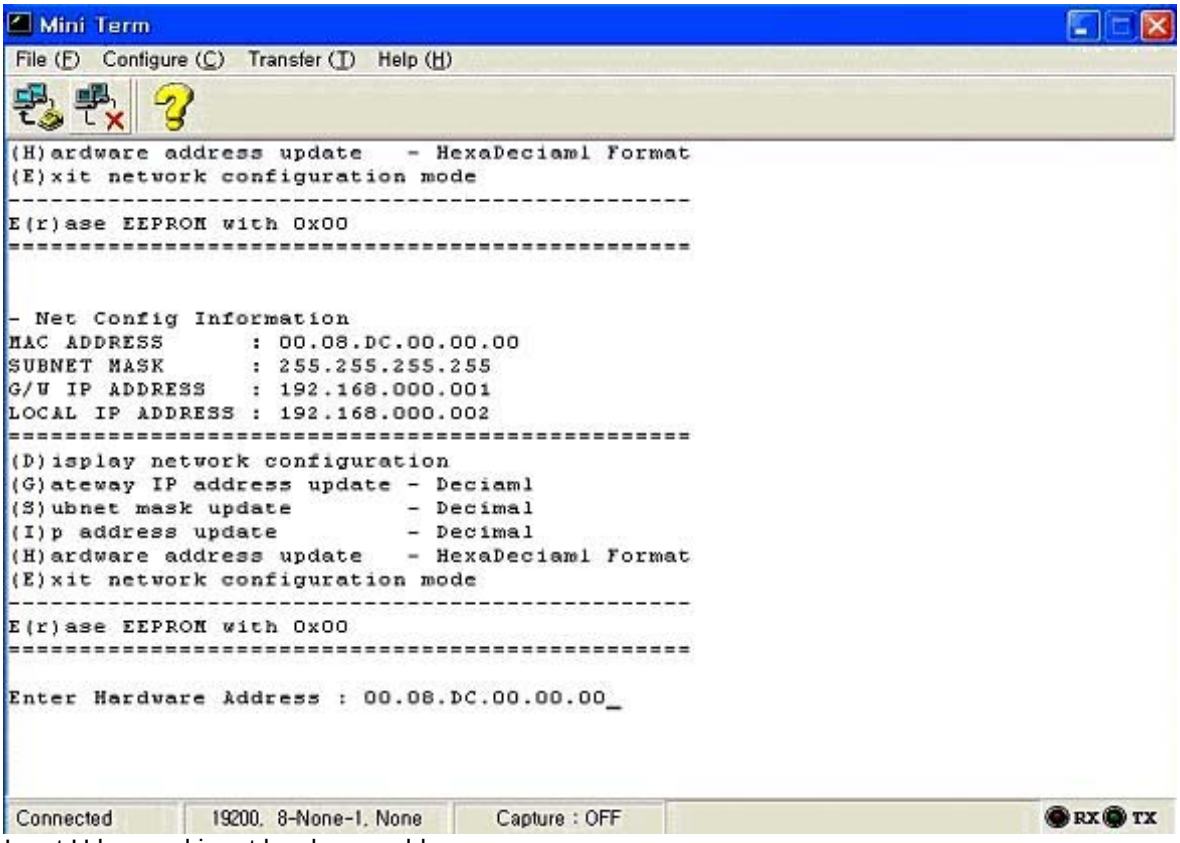
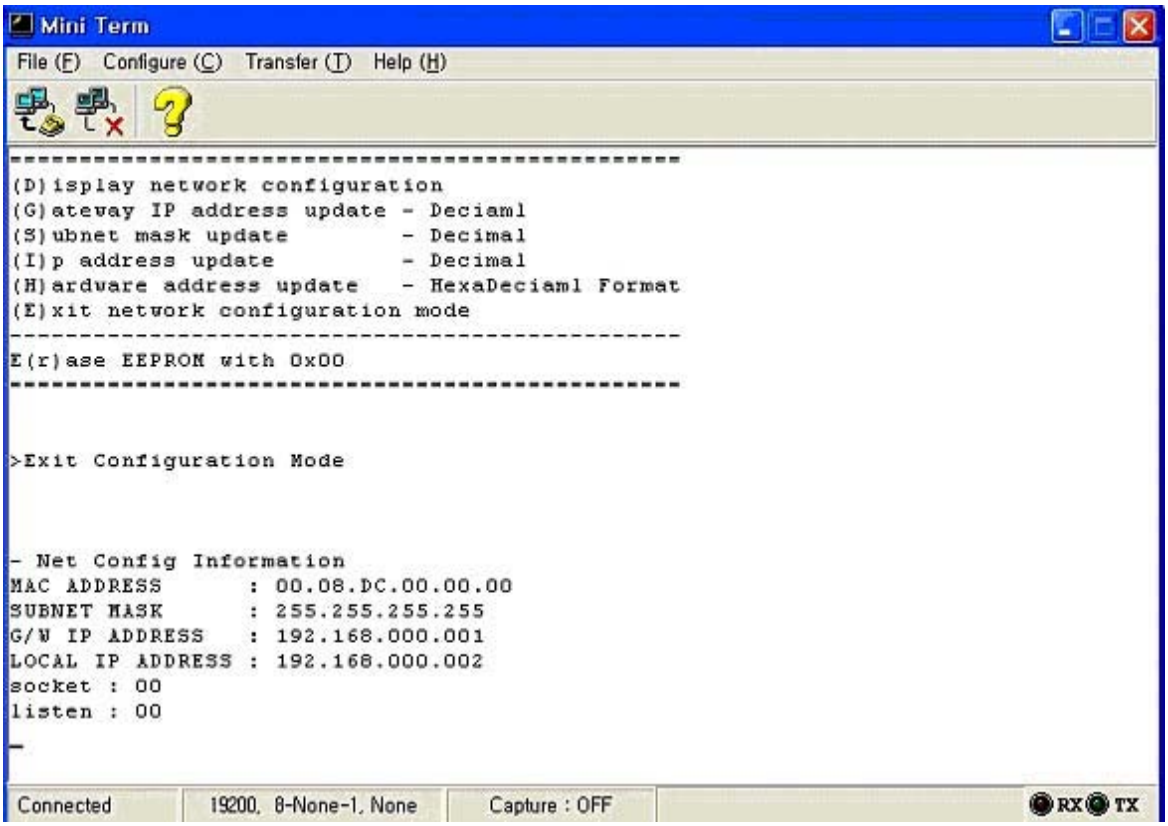
Input I key and input EDM-1818M IP Address


Mini Term
File (F) Configure (C) Transfer (T) Help (H)
(H)ardware address update - HexaDeciaml Format
(E)xit network configuration mode
E(r)ase EEPROM with 0x00
- Net Config Information
MAC ADDRESS : 00.08.DC.00.00.00
SUBNET MASK : 255.255.255.255
G/W IP ADDRESS : 192.168.000.001
LOCAL IP ADDRESS : 192.168.000.002
(D)isplay network configuration
(G)ateway IP address update - Deciaml
(S)ubnet mask update - Decimal
(I)p address update - Decimal
(H)ardware address update - HexaDeciaml Format
(E)xit network configuration mode
E(r)ase EEPROM with 0x00
Enter Hardware Address : 00.08.DC.00.00.00_
Connected
19200, 8-None-1, None
Capture : OFF
RX TX

Input H key and input hardware address


Mini Term
File (F) Configure (C) Transfer (T) Help (H)
(D)isplay network configuration
(G)ateway IP address update - Deciaml
(S)ubnet mask update - Decimal
(I)p address update - Decimal
(H)ardware address update - HexaDeciaml Format
(E)xit network configuration mode
E(r)ase EEPROM with 0x00
>Exit Configuration Mode
- Net Config Information
MAC ADDRESS : 00.08.DC.00.00.00
SUBNET MASK : 255.255.255.255
G/W IP ADDRESS : 192.168.000.001
LOCAL IP ADDRESS : 192.168.000.002
socket : 00
listen : 00
Connected
19200, 8-None-1, None
Capture : OFF
RX TX

If all inputs are completed, exit the configuration by inputting E key.

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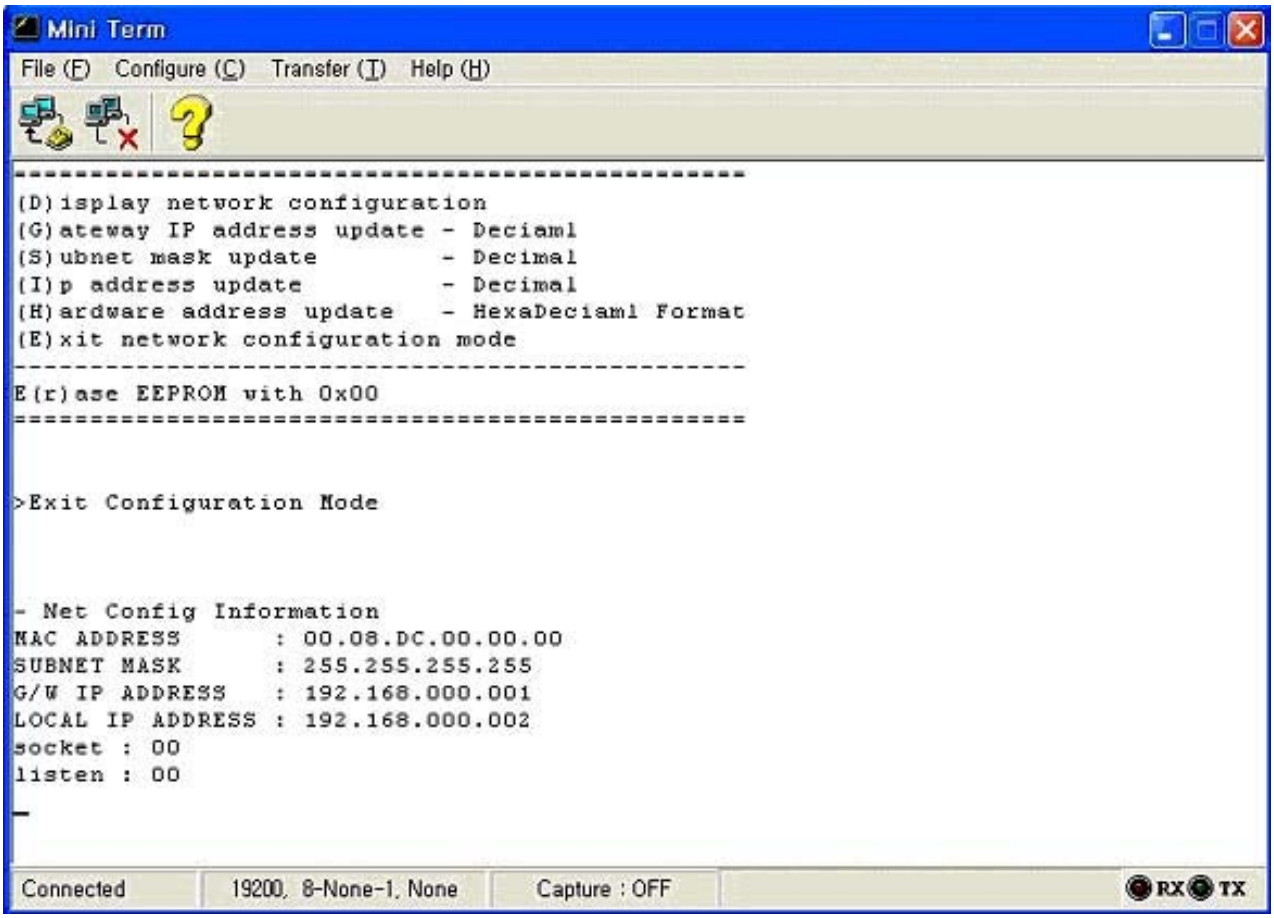
Mini Term
File (F) Configure (C) Transfer (T) Help (H)
(D)isplay network configuration
(G)ateway IP address update - Deciaml
(S)ubnet mask update - Decimal
(I)p address update - Decimal
(H)ardware address update - HexaDeciaml Format
(E)xit network configuration mode
E(r)ase EEPROM with 0x00
>Exit Configuration Mode
- Net Config Information
MAC ADDRESS : 00.08.DC.00.00.00
SUBNET MASK : 255.255.255.255
G/W IP ADDRESS : 192.168.000.001
LOCAL IP ADDRESS : 192.168.000.002
socket : 00
listen : 00
Connected
19200, 8-None-1, None
Capture : OFF
RX TX

It operates with IP set as above.

If Explorer is executed and set IP is inputted, you can see the screen to change channels as above. If you select Input channel for output and press SEND, the channel will be changed.

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4 Communication code configuration

4-1 Configuration of RS-232C communication code

From Computer		
Code (48Byte)	Start Header (3Byte) | Product ID (2Byte) | Command (2Byte) | Data (40Byte) | Tail (1Byte)	
Code Name	Byte Data	Function
Start Header	21h (!)	Request Frame Start
Start Header	30h (0)	Request Frame Start
Start Header	31h (1)	Request Frame Start
Product ID	30h ~ 39h (DIP Switch Set)	Product Number
Product ID	30h ~ 39h (DIP Switch Set)	Product Number
Command	01	Input SW Assign
	02	Input SW Assign Salvo
	03	EDID SW Assign
	04	EDID SW Assign Salvo
	10	Assignment Status Request
	20	Reset
	30	Firmware Version Request
	40	RS-232C Assign
Number of total Output	30h ~ 33h	Assign of Total Output
Input Data10	30h ~ 39h	Input Channel Select
Input Data1	30h ~ 39h	Input Channel Select
Output First Data10	30h ~ 39h	Output A Input Select Data
Output First Data1	30h ~ 39h	Output B Input Select Data
Output Last Data10	30h ~ 39h	Output N Input Select Data
Output Last Data1	30h ~ 39h	Output O Input Select Data
Tail (End)	2Ah(*)	Frame End

From Matrix Router		
Code (8Byte)	Start Header (3Byte) | Product ID (2Byte) | Command (2Byte) | Tail (1Byte)	
Code Name	Byte Data	Function
Head (Start)	21h	Reply Frame Start
Start Header	30h (0)	Request Frame Start
Start Header	31h (1)	Request Frame Start
Product ID	30h ~ 39h (DIP Switch Set)	Product Number
Product ID	30h ~ 39h (DIP Switch Set)	Product Number
Command	01,02,03,04,10,20,30,40	Command Return
Tail (End)	2Ah	Frame End

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Example of communication code when product ID is set to “01”.

INPUT SW ASSIGN: assign input 5 to three outputs: output 3, 4, and 6

Byte	Header			ID		Command		Number of Output		Input		Output 1		Output 2		Output 3	
ASCII	!	0	1	0	1	0	1	0	3	0	5	0	3	0	4	1	6
Hex	21h	30h	31h	30h	31h	30h	31h	30h	33h	30h	35h	30h	33h	30h	36h	31h	34h
Byte	Tail																
ASCII	*																
Hex	2Ah																

INPUT SW ASSIGN SALVO: change input and output of whole channel

Byte	Header			ID		Command		Output1 of Input		Output2 of Input		Output3 of Input		Output4 of Input		Output5 of Input	
ASCII	!	0	1	0	1	0	2	1	2	0	7	1	2	0	7	1	2
Hex	21h	30h	31h	30h	31h	30h	32h	31h	32h	30h	37h	31h	32h	30h	37h	31h	32h
Byte	Output6 of Input		Output7 of Input		Output8 of Input		Output9 of Input		Output10 of Input		Output11 of Input		Output12 of Input		Output13 of Input	
ASCII	0	7	1	2	0	7	1	2	0	7	1	2	0	7	1	2
Hex	30h	37h	31h	32h	30h	37h	31h	32h	30h	37h	31h	32h	30h	37h	31h	32h
Byte	Output14 of Input		Output15 of Input		Output16 of Input		Output17 of Input		Output18 of Input		Tail					
ASCII	0	7	1	2	0	7	1	2	0	7	*					
Hex	30h	37h	31h	32h	30h	37h	31h	32h	30h	37h	2Ah					

EDID SW ASSIGN: save EDID data of output 5 to input 1 and 2

Byte	Header			ID		Command		Number of Output		Output		Input 1		Input 2		Tail	
ASCII	!	0	1	0	1	0	3	0	2	0	5	0	1	0	3	*	
Hex	21h	30h	31h	30h	31h	30h	33h	30h	32h	30h	35h	30h	31h	30h	33h	2Ah	

EDID SW ASSIGN SALVO: change EDID data of whole channel

Byte	Header			ID		Command		Output1 of Input		Output2 of Input		Output3 of Input		Output4 of Input		Output5 of Input	
ASCII	!	0	1	0	1	0	4	1	2	0	7	1	2	0	7	1	2
Hex	21h	30h	31h	30h	31h	31h	30h	31h	32h	30h	37h	31h	32h	30h	37h	31h	32h
Byte	Output6 of Input		Output7 of Input		Output8 of Input		Output9 of Input		Output10 of Input		Output11 of Input		Output12 of Input		Output13 of Input	
ASCII	0	7	1	2	0	7	1	2	0	7	1	2	0	7	1	2
Hex	30h	37h	31h	32h	30h	37h	31h	32h	30h	37h	31h	32h	30h	37h	31h	32h

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Byte	Output14 of Input		Output15 of Input		Output16 of Input		Output17 of Input		Output18 of Input		Tail					
ASCII	0	7	1	2	0	7	1	2	0	7	*					
Hex	30h	37h	31h	32h	30h	37h	31h	32h	30h	37h	2Ah					

ASSIGNMENT STATUS REQUEST: check the status of current input and output channel

Byte	Header			ID		Command		Tail	
ASCII	!	0	1	0	1	1	0	*	
Hex	21h	30h	31h	30h	31h	31h	30h	2Ah	

RESET: reset Matrix router

Byte	Header			ID		Command		Tail	
ASCII	!	0	1	0	1	2	0	*	
Hex	21h	30h	31h	30h	31h	32h	30h	2Ah	

FIRMWARE VERSION REQUEST: check firmware version

Byte	Header			ID		Command		Tail	
ASCII	!	0	1	0	1	3	0	*	
Hex	21h	30h	31h	30h	31h	33h	30h	2Ah	

RS-232C ASSIGN: change the set up of RS-232C communication port (19200bps)

Byte	Header			ID		Command		Baud rate		Data bit		Stop bit		Parity bit		Tail	
ASCII	!	0	1	0	1	4	0	0	4	0	0	0	0	0	0	*	
Hex	21h	30h	31h	30h	31h	34h	30h	30h	34h	30h	30h	30h	30h	30h	30h	2Ah	

Baud rate:

“ 00 ” : 1920 bps , “ 01 ” : 4800 bps , “ 02 ” : 9600 bps , “ 03 ” : 14400 bps , “ 04 ” : 19200 bps
“ 05 ” : 28800 bps , “ 06 ” : 38400 bps , “ 07 ” : 57600 bps , “ 08 ” : 76800 bps , “ 09 ” : 115200 bps
“ 10 ” : 250000 bps
Data bit:

“ 00 ” : 8 bit , “ 01 ” : 5 bit , “ 02 ” : 6 bit , “ 03 ” : 7 bit

Stop bit:

“ 00 ” : 1 bit , “ 01 ” : 2 bit

Parity bit:

“ 00 ” : disable , “ 01 ” : even parity , “ 02 ” : odd parity

***** Attention on RS-232C communication control ****
If user develops control program without using Digital Controller that is provided together with this product, please make sure that response value should be confirmed after transmission of control code and then the next control code should be transmitted.

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4-2 LAN communication code configuration

1. Switching by explorer

Command set sent to web server (matrix router) for switching

Beginning with character train of “LCD.CGI”, “O 01 = I 18” means “Output 01 Input 18”, the sequences and sizes of character train should be the same.

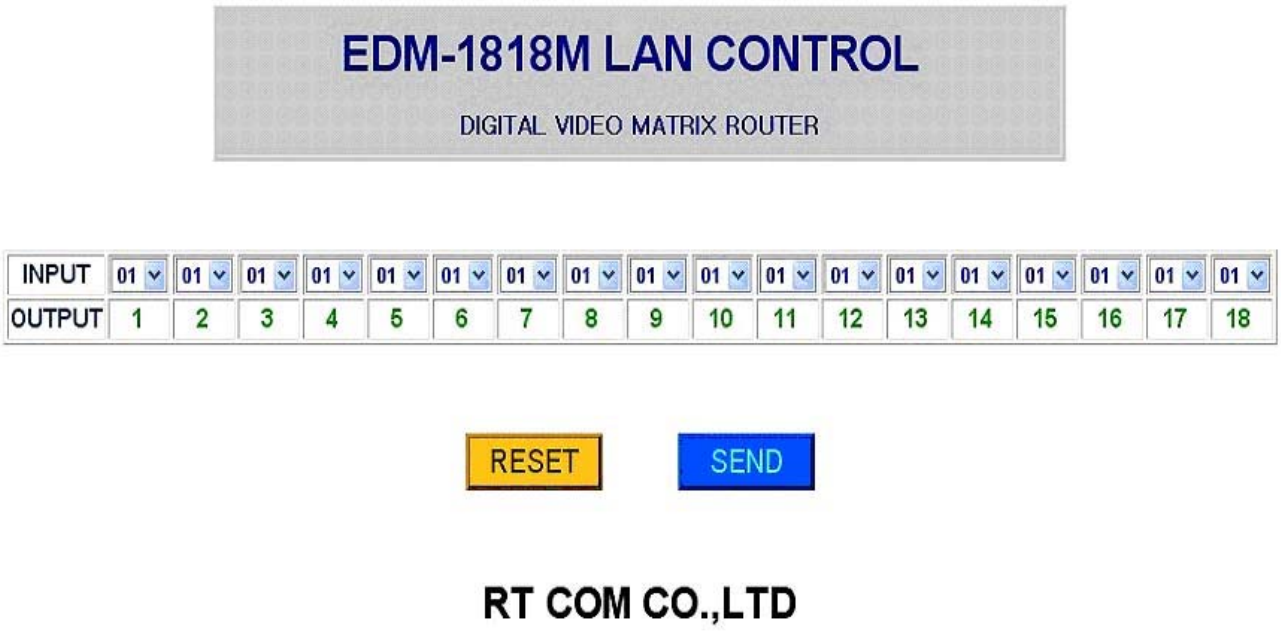
After execute reset, it should be connected again to server (switcher).

Channel change

http://192.168.0.2/LCD.CGI?O01=I16&O02=I18&O03=I11&O04=I12&O05=I13&O06=I08&O07=I15&O08=I16&O09=I17&O10=I02&O11=I01&O12=I02&O13=I03&O14=I04&O15=I05&O16=I06&O17=I07&O18=I08&Submit_=SEND

Initialization (Reset)

http://192.168.0.2/LCD.CGI?O01=I16&O02=I18&O03=I11&O04=I12&O05=I13&O06=I08&O07=I15&O08=I16&O09=I17&O10=I02&O11=I01&O12=I02&O13=I03&O14=I04&O15=I05&O16=I06&O17=I07&O18=I08&Submit_=Reset



LAN Switch Control on explorer

4-3 Connector Pin Assignment

POWER INPUT

Part No.	Pin No.	Description	Remarks
Power Jack(4P)	1	VCC(DC12V)	
	2	VCC(DC12V)	
	3	GND	
	4	GND	

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RS-232C INPUT

Part No.	Pin No.	Description	Remarks
D-SUB 9 Pin Connector	1	Not used	
	2	Rx D	
	3	Tx D	
	4	Not used	
	5	GND	
	6	Not used	
	7	Not used	
	8	Not used	
	9	Not used	

LAN INPUT

Part No.	Pin No.	Description	Remarks
RJ-45 8 Pin Connector	1	Transmit data (+)	
	2	Transmit data (-)	
	3	Receive data(+)	
	4	Not used	
	5	Not used	
	6	Receive data(-)	
	7	Not used	
	8	Not used	

DVI-D INPUT

Part No.	Pin No.	Description	Remarks
DVI-D 29 Pin Connector	1	TMDS DATA 2M	
	2	TMDS DATA 2P	
	3	TMDS DATA 2/4 Shield	
	4	TMDS DATA 4M(N.C)	
	5	TMDS DATA 4P(N.C)	
	6	DDC Clock	
	7	DDC Data	
	8	N.C	
	9	TMDS DATA 1M	
	10	TMDS DATA 1P	
	11	TMDS DATA 1/3 Shield	
	12	TMDS DATA 3M(N.C)	
	13	TMDS DATA 3P(N.C)	
	14	5V	
	15	GND	
	16	Hot Plug Detect	
	17	TMDS DATA 0M	
	18	TMDS DATA 0P	
	19	TMDS DATA 0/5 Shield	
	20	TMDS DATA 5M(N.C)	
	21	TMDS DATA 5P(N.C)	
	22	TMDS DATA Clock Shield	
	23	TMDS Clock P	
	24	TMDS Clock M	
	25~29	N.C	

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5 Warranty Information

1 (One) Year Warranty

RTcom USA warrants this DVI Switcher to be free from defects in workmanship and materials, under normal use and service, for a period of one (1) year from the date of purchase from RTcom USA or its authorized resellers.

If a product does not work as warranted during the applicable warranty period, RTcom USA shall, at its option and expense, repair the defective product or part, deliver to customer an equivalent product or part to replace the defective item, or refund to customer the purchase price paid for the defective product.

All products that are replaced will become the property of RTcom USA.

Replacement products may be new or reconditioned.

Any replaced or repaired product or part has a ninety (90) day warranty or the reminder of the initial warranty period, whichever is longer.

RTcom USA. shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to RTcom USA for repair under warranty or not.

Warranty Limitation and Exclusion
RTcom USA shall have no further obligation under the foregoing limited warranty if the product has been damaged due to abuse, misuse, neglect, accident, unusual physical or electrical stress, unauthorized modifications, tampering, alterations, or service other than by RTcom USA or its authorized agents, causes other than from ordinary use or failure to properly use the product in the application for which said product is intended.

RETURNS
All returns MUST have an RMA number. Please contact your local dealer or RTcom USA, Inc where you purchased this product to obtain to RMA number.

RTcom USA Service Dept.
Tel: 973-383-4878, Fax: 973-383-1160, info@digitalextender.com

Address
286 Houses Corner Road
Sparta, NJ 07871 USA

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RTcom USA, Inc Location

RTcom USA. Inc.
286 Houses Corner Road
Sparta, NJ 07871 USA

Tel: 1-973-383-4878
Fax: 1-973-383-1160
www.digitalextender.com

For order support, please contact your Distributor or Reseller.

For technical support, check with the Email: rtcomusa@earthlink.net
info@digitalextender.com